

U.S. Serial No. 09/921,921
Reply to OA dated July 26, 2005

Atty. Docket No. 740819-000595

REMARKS

Claims 11-18 and 22-29 are pending. Claims 11, 13, 17, 22 and 26 have been amended.

Applicants respectfully note the Examiner's withdrawal of allowability of claims 11-18 and 22-29 in the previous Action in view of new rejections.

In the Action, claim 13 is objected to for an informality in spelling. The typographical error has been corrected. Reconsideration and withdrawal of the objection to claim 13 are respectfully requested.

Claim 22 stands rejected under 35 U.S.C. §112 for lack of antecedent basis for the term "said electron beam". Applicants have amended claim 22 to provide the requisite identification and overcome the §112 rejection. Claim 22 also has been amended for clarity. Reconsideration and withdrawal of the §112 rejection of claim 22 are respectfully requested.

Claims 11, 13, 15, 17, 18, 22, 24-26 and 28-29 stand rejected under 35 U.S.C. §103(a) for obviousness over JP 07153662 to Toshihiko in view of the article by Kunz *et al.*

The claimed invention stems from the inventors' observation that when a resist film is irradiated with an electron beam, the outgases released from the resist film can absorb the energy of the electron beam in such a way as to degrade the quality of the desired lithography. The invention solves this problem by providing a mechanism which not only removes the outgases, but collects them so that they may be analyzed to determine the kind and quality of impurities present in the outgases. The result of the analysis may be used to enhance the accuracy of the lithography.

Specifically, the wafer is irradiated with the electron beam to perform the gas chromatography analysis. As noted in the Figures of the present invention, particularly Figure 1, the entire wafer is irradiated simultaneously by the electron beam ("fully irradiated") which is an entirely different approach than that set forth in the cited references. See, Specification, page 7, lines 13-18 and page 8, line 24 to page 9, line 4.

In the apparatus in Toshihiko, the electron beam is applied in sections where the wafer is divided into a plurality of regions, which are irradiated in stages at multiple times. The

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deficiencies of Toshihiko as a primary reference are not cured by the addition of Kunz, which also uses F₂ laser light in irradiating the resist film in stages and by regions. Applicants have amended claims 11, 13, 17, 22 and 26 to better delineate this feature of the instant invention.

Claims 12, 14, 16, 23 and 27 also stand rejected under 35 U.S.C. §103(a) as being unpatentable for obviousness over the combination of Toshihiko in view of Kunz, as applied above, and further in view of U.S. Patent No. 5,102,855 to Greinke *et al.*, which is cited purely for the use of activated carbon. Greinke also fails to disclose or suggest the simultaneous application of the electron beam to the wafer, as set forth in the claims, as amended, and fails to cure the aforementioned defects in the combination of Toshihiko and Kunz.

Applicants respectfully submit that Toshihiko, Kunz and Greinke, either alone or in combination, fail to disclose or suggest the present invention, as set forth in the present claims.


Applicants respectfully submit that pending claims 11-18 and 22-29, as amended, are readily distinguishable over the references cited and are not suggested by any combination thereof. Applicants, accordingly, respectfully request reconsideration and withdrawal of the §103(a) rejections over the claims.

Now that all the claims are believed to be patentable, the prompt issuance of a Notice of Allowance and Issue Fee Due is hereby earnestly solicited.

The commissioner is authorized to charge any overage or shortage in connection with filing of this Amendment to Despoit Account No. 19-2380 (740819-000595).

Respectfully submitted,

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